

The impact of organic bananas in Alto Beni, Bolivia

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Bioversity International's series of Impact Assessment Briefs aims to inform readers about the major results of evaluations carried out by the centre. The Briefs summarize conclusions and methods of more formal papers published in peer-reviewed journals.

From 2002 to 2005 Bioversity International (then operating through INIBAP) implemented a project intended to improve the livelihoods of farmers in the Alto Beni region of Bolivia. The focus of the project was on modernizing banana production, by training farmers in organic production methods and certification and by establishing a community enterprise to help market their organic bananas. This Impact Brief reports on an assessment using an asset-based livelihoods approach and carried out in 2009, five years after the end of the project.

Overall, about 85% of farm families in the region said their incomes had increased since the end of the project, and the community enterprise grew in terms of both sales and

membership. The project clearly initiated and catalyzed the developments that resulted in these outcomes. The impact assessment also identified elements that could be used to strengthen any future similar projects; a greater ongoing investment in the community enterprise, particularly in social and human capital, and decentralization to meet farmers' preferred methods of working are two examples.

BACKGROUND

The Alto Beni region of Bolivia comprises the provinces of Sud Yungas, Caranavi and Larecaja Tropical, and is about 230 km from the capital La Paz. It began to be settled by people from the Altiplano in the 1960s, and poverty among rural people is high, 73-90% according to a 2001 census. The region has great potential for coca production, which would be attractive to farmers for several reasons. Coca prices are high and stable, unlike the volatile prices for legal crops such as bananas, citrus and passion fruits. Poor infrastructure, with bad roads and unreliable transport, and the remoteness of the region from urban markets, also work against legal crops, which are highly perishable compared to processed coca. One estimate put the profits for coca at 5 to 10 times greater per hectare than for conventional crops.

Against this background, the Inter-American Drug Abuse Control Commission financed Bioversity International to implement a project that would improve farmers' livelihoods by modernizing banana production to tap into the emerging specialized market for certified organic bananas. Longer term,



Farmers wash their bananas with lemon juice, a low-tech solution based on the use of citric acid in the export market and introduced to the BanaBeni farmers by the project. The farmers prefer to do things on their own or in small groups, rather than in the centralized facilities originally provided by the project.

Photo: C. Staver/Bioversity International

the strengthened capacity to benefit from legal crops was expected to help to ensure that coca production did not expand into Alto Beni. The project focused on banana partly because as a perennial crop it offers year round harvests, and therefore the possibility of regular income. Along with stabilizing cash flow through the year, the project also aimed to reduce price volatility and improve transport, all of which would reduce the incentive to grow coca.

PROJECT GOALS

The project adopted twin tracks to meet its objectives. On the one hand, farmers would be trained to produce certified organic bananas. On the other hand, a community enterprise would be formed to commercialize the product, establishing links with clients and taking care of logistics, marketing and sales. To that end, the project helped to set up BanaBeni, a profit-oriented enterprise owned and operated by UNABENI, the Asociación de Productores Agroecológicos de Alto Beni. BanaBeni buys bananas from its associate producers and provides transport and logistics as well as ripening facilities.

Originally the project aimed to link BanaBeni to export markets for organic bananas. In 2004, however, Bolivia implemented a policy to promote local, organic, small-scale farmers by incorporating organic bananas in the meals offered by public schools in La Paz. The school meal programme contracts for supplies by open bidding, and offers no premium for organic produce. Nevertheless, the stable price offered was an incentive to BanaBeni to become the primary supplier. It was a major project achievement to insert BanaBeni into that market.

For farmers, the project:

- Researched crop management and pest and disease control.
- Trained farmers in organic banana production, soil fertility management and harvest and post-harvest practices.
- Financed the construction of packing sheds and other investments to ensure high quality fruit.
- Strengthened 10 farmer associations, enabling them to guarantee minimum volumes of high-quality fruit.
- Supported farmer associations to gain organic certification.

For the enterprise, the project:

- Stimulated and facilitated the creation of BanaBeni.
- Provided infrastructure, including packing stations, lorries, crates and ripening chambers.
- Supported enterprise administration, organic certification and negotiation of new outlets.
- Trained farmers as managers and administrators of BanaBeni.

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STUDY METHODS

The impact assessment, which was carried out by Bioversity about five years after the end of the project, made use of the project documentation, household surveys based on structured questionnaires, interviews with key informants and secondary data. Detailed aspects of the methodology were based on guidelines produced by the Ford Foundation and partners to improve the impact assessment of value chain approaches.

Surveys were conducted with 120 households, 80 of which were associates of BanaBeni and 40 were not involved in the project. Project households included representatives of all 10 farmer associations, with an average of 6-7 randomly selected farmers from each association. Key informants included the Bioversity International Project Coordinator, BanaBeni staff, representatives of client enterprises involved in the distribution of school meals, an organization that provides credit and services to farmer associations, and a representative of the municipal government of La Paz. The study team confirmed information from the surveys and interviews by visiting the area and discussing matters in greater detail.

PROJECT IMPACT

FARMERS

Farmers in Alto Beni cultivate between 7 and 15 hectares, and more than doubled the area devoted to banana after the end of the project. The increase was greater for members of BanaBeni, who reported that their main motivation was the increased and more stable demand for their produce. Despite the project, crop management is extensive and yields are low and highly variable; the increase in banana yield, from 890 boxes per hectare in 2004 to 1040 boxes per hectare in 2009, is not statistically significant.

About 85% of the surveyed farmers said that their incomes had increased over the past five years. This was true for participants in the project and others. Although there are no estimates for farmers' incomes before the start of the project, a study of livelihoods in the region estimated an average annual farm income of US\$2206 in 2004. Total estimated income for BanaBeni farmers averaged US\$6300, versus US\$5700 for non-affiliated farmers; suggestive, but not statistically significant. Both groups thus benefited from greater demand for bananas and the improved services offered by intermediaries. BanaBeni farmers sold about 40% of their production to the company, which accounted for 56% of their banana income, and derived considerably more of their income from bananas than did non-affiliated

farmers (73% vs 17%). During the survey, several of the farmers highlighted the additional value of regular weekly payments from BanaBeni, compared to less reliable sales to other intermediaries.

BanaBeni affiliates spend significantly more than non-participants on food items such as milk and meat (average US\$599 compared to US\$488). Many of the farmers also used their additional income to buy household assets, further improving their standard of living. More than half (55%) had improved the roof of their house during the previous 5 years, and almost a third (31%) had invested in cement floors. Some had also bought TV and audio equipment. All farmers obtained credit after the project, and were using it to expand their holdings and buy tools.

Among the increases in human capital associated with the project was the farmers' increased knowledge about production, harvest and post-harvest practices, and putting that knowledge to work. For example, farmers now manage the crop in the field for higher quality, dehanding the bunch after flowering. They also understand the different requirements of different buyers and respond appropriately, washing the fruits and preparing single bananas for school meals (for easier handling) or whole hands for intermediaries for the national market. Overall they are more aware of maintaining quality and of the penalties—in the form of fines—for failure.

The project trained not only farmers associated with BanaBeni, but also other farmers in the communities. As a result, improved field management and post-harvest handling were widespread, so that the benefits of higher average prices (from higher quality and competition among intermediaries) accrued to all farmers in the region. The project's lead in training farmers for BanaBeni initiated the more general improvement.

ENTERPRISE

BanaBeni, the enterprise established for the project, not only survived but thrived after the end of project support. At the end of the project there were 10 farmer associations with 630 members. Five years later this had expanded to 14 associations with about 1000 members. Total number of boxes shipped increased from 31,000 in 2005 to 173,000 boxes in 2009, representing more than 20 million organic breakfast bananas for schoolchildren in the towns of La Paz, El Alto and Santa Cruz.

This represents a huge achievement for the company, which key informants indicated was now well recognized as a distributor of organic bananas, supplying one of the most demanding market segments. The public school meals programme requires undamaged, ready-to-eat bananas delivered as single fruits or split hands of 3-5 fruits, with fines levied for non-compliance.

BanaBeni now has more than 15 employees responsible for management and administration, technical assistance to farmers and technical staff to manage packing, ripening and transport. In each association there is a project-trained farmer coordinator who organizes harvest dates and

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logistics for packing and transport and who follows up on technical issues in support of extension workers.

LESSONS LEARNED AND RISK FACTORS

The impact assessment was able to draw several lessons from the project and its aftermath, and to identify risk factors that could influence the future of the farmers and BanaBeni.

BanaBeni is not entirely self-sustaining, with consistent cash flow problems caused by late payment by its clients. Since the end of the project donors have invested in infrastructure, subsidized salaries and injected funds to maintain liquidity. Despite this, management and administration are potential problem areas. Turnover of key staff threatens sustainability, with two limiting factors. The director is elected yearly from among the associate farmers, and the company cannot offer an outsider a salary commensurate with responsibility for the complex logistics on which the company's success depends.

BanaBeni's restricted client base is also a risk. The school breakfast programme, which provided the opportunity for BanaBeni's creation and growth, is expanding but it depends on continued political support. Unfortunately, the company cannot capitalize on the marketing chain it has built up because at present other markets have other requirements and will not accept surplus single fruits and split hands from the school meals supply chain. At present there is no premium for organic bananas in national markets, nor supply chains for export, for example to Peru and Chile, although these opportunities could be developed in future.

An opportunity also exists for BanaBeni to upgrade its own services and improve its ability to provide services to its associate farmers. Processing and ripening could be improved with additional technical assistance. And farmers say that they need improvements in production technology and expertise to maintain quality and increase production. While BanaBeni does offer some services, it could improve this aspect of its activities and offer credit to farmers, which it does not currently do.

The project invested heavily in centralized infrastructure and equipment. While the start-up capital and equipment for BanaBeni were an important contribution to the company's success, much of the investment in centralized modern production technology on model farms, such as cableways for moving the banana bunches and a central packing station, remains underused. Farmers prefer to process the fruits on their own or in very small groups, using simple adapted local structures.

Production technologies remain a challenge. Although they now have organic certification, farmers still lack the

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ability to manage soil fertility sustainably. They know that they need the technology to improve their soils, but at present there is no supplier of organic fertilizers in Bolivia. Options do exist, and these could be implemented by individual farmers and by communities and BanaBeni. Making these available, along with credit to enable farmers to invest, would help to secure and sustain increased banana production, and thus the livelihoods of the farmers and the survival of BanaBeni.

Increasing specialization on bananas is probably also a risk to sustainable production systems and livelihoods. The cultivation of cocoa, citrus, cassava, rice, papaya and maize have all declined since the end of the project, more so among BanaBeni associates, potentially increasing vulnerability to market risks and increasing food insecurity, for example in relation to climate change.

CONCLUSIONS

The project instigated the formation of BanaBeni and so can take credit for a large share of its achievements, including the improved livelihoods and increased incomes of farmers in Alto Beni. However, government policies, including not only the school meals programme but also improvements in transport infrastructure, definitely favoured BanaBeni's success. The impact of the project would have been very different without the school meals programme and yet that programme, as noted above, remains a risk to future sustainability. A repeat of a similar project would be advised to put more effort into supplying or facilitating the business services that a company such as BanaBeni requires as it matures. Longer-term support, even at a low level, would contribute greatly to the consolidation of growth by the company and the sustainability of its operations, thus ensuring that the company continues to contribute to improved livelihoods for farmers.

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